Notice of Allowability	Application No.	Applicant(s)	
	09/830,694	RINK ET AL.	
	Examiner	Art Unit	
	Bernard Lipman	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *papers filed 03 March 2004*.

2. ☒ The allowed claim(s) is/are *4-6, 8, 9, 12, 15-18, 20, 31 and 32 (rejoined)*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Anne Sabourin, Esq. on 01 September 2005.

The application has been amended as follows: Claims have been amended to rejoin claims withdrawn, to correct dependency and to clarify substituents in component iii. The corrected claims are:

Pending Claims:
Claims 1-3 (Canceled)

4. (Currently Amended) A liquid composition [of claim 3,] prepared by copolymerizing olefinically unsaturated compounds in a reaction medium of reactive diluents wherein the reactive diluents comprise polyols [used comprise compounds] selected from the group consisting of

(i) hyperbranched compounds containing (a) a tetrafunctional central group derived from [compounds selected from the group consisting of] at least one of ditrimethylolpropane, diglycerol, ditrimethylolethane and (b)a tetrafunctional central group

of the general formula I

$$C[-A_q-X-]_m[-A_r-x-]_n[-A_s-X-]_o[A_t-X-]_p \qquad (I),$$

in which the indices and variables have the following definitions:
m + n + o + p = 4; where

m is an integer from 1 to 3, and

n, o and p are 0 or an integer from 1 to 3;

q, r, s and t are an integer from I to 5, where q ≥ r, s, t,

X is -0-, -S- or -NH-;

A is $-CR_2-$; where

R is selected from the group consisting of -H, -F, -Cl, -Br, -CN, $-NO_2$ C_1-C_3 alkyl or haloalkyl or C_1-C_3 alkoxy radical or, if q, r, s and/or t are at least 2, R is selected from the group consisting of a C_2-C_4 alkanediyl, oxaalkanediyl radical having 2 to 5 carbon atoms, an oxygen atom -O- which bridges from 3 to 5 carbon atoms of the radical -A- and mixtures thereof;

[(ii) cyclic and/or acyclic C_9-C_{16} alkanes functionalized with at least two hydroxyl groups or at least one hydroxyl group and at least one thiol group;] and

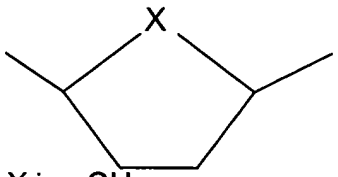
(iii) polyols obtained by hydroformylating oligomers of the formula (III),

$R^3R^4C=[CH-R^2-CH]_v=CR^5R^6$ (III),

in which R^2 is $-(-CH_2-)_w-$,

in which [the index] w is an integer from 1 to 6, or

R^2=



in which X is $-CH_2-$ or an oxygen atom;

R^3, R^4, R^5 and R^6 independently of one another are hydrogen atoms or alkyl of from C_1 to C_{10} carbon chain length; and

the index v is an integer from 1 to 15.

5. (Withdrawn) A liquid composition of claim 4, wherein
the polyols (I) used comprise
a hyperbranched compound obtained by reacting 2,2- bishydroxymethylbutane-1,4-diol with phthalic anhydride and then reacting the resultant intermediate with glycidyl esters of tertiary, highly branched, saturated monocarboxylic acids,

the polyols (ii) used comprise dialkyloctanediols, and

the polyols (iii) used comprise hydroformylated and hydrogenated oligomers, obtained by metathesis from acyclic monoolefins and cyclic monoolefins, hydroformylation of the -resultant oligomers and subsequent hydrogenation, the cyclic monoolefin used comprising cyclopentene and the acyclic monoolefins used comprising hydrocarbon mixtures obtained in petroleum processing by cracking (C_5 cut), and the polyols (iii) having a hydroxyl number (OHN) of from 200 to 60, a number-average molecular weight M_n, of from 400 to 1 000, a mass-average molecular weight M_w, in the range from 600 to 2 000, and a polydispersity M_n/M_w, from 1.4 to 3.

6. (Withdrawn) A liquid composition of claim 3, wherein the reactive diluents containing epoxide groups comprise

(iv) glycidyl ethers of polyols or polyphenols such as glycerol, diglycerol, glucitol, erythritol, pentaerythritol, dipentaerythritol, trimethylolpropane, trimethylolethane, ditrimethylolpropane, ditrimethylolethane, tetrakis(2-hydroxyethyl)ethane, tetrakis(3-hydroxypropyl)methane, the tetraols II1 to II10:

HO- $(-CH_2-)_2$-C $(-CH_2-OH)_3$,
(II1)

HO - (- CH_2-)$_3$C (- CH-$_2$ - OH)$_3$,
(II2)

HO- (-CH_2-)$_4$-C (-CH_2-OH)$_3$,
(II3)

HO- (-CH_2-) $_5$-C (-CH--OH)$_3$,
(II4)
[HO- (-CH_2-)$_2$-]$_2$C(CH_2-OH)$_2$,
(115)

[HO- (-CH_2-)$_2$-]$_3$C-CH_2-OH,
(II6)

HO- (-CH_2-)$_3$-C[-(-CH_2-)$_2$-OH]$_3$,
(II7)

HO- (-CH_2-)$_3$-C[- (-CH_2-)$_2$-OH]$_2$ (-CH_2-OH)
(II8)
HO- (-CH_2-)$_4$-C (-CH_2-OH)[- (-CH_2-)$_2$-OH][-(-CH_2-)$_3$- OH] or
(II9)

HO- (-CH_2-)$_5$-C (-CH_2-OH)[- (-CH_2-)$_4$-OH] 2
(II10);

the polyols (i), (ii) and (iii), pyrocatechol, resorcinol, hydroquinone, pyrogallol, phloroglucinol, (p-hydroxy- phenyl)phloroglucinol, 5-(7-hydroxynaphth-l- yl)pyrogallol, bisphenol F, bisphenol A or novolaks;

Claim 7 (Canceled).

8. (Currently Amended) A process for preparing a liquid composition according to claim 4 [by] comprising polymerizing by free-radical copolymerization in a liquid reaction medium, which comprises using, as the reaction medium, reactive diluents for thermally curable multisubstance mixtures.

9. (Previously Amended) The process as claimed in claim 8, wherein a fraction of the reactive diluents is modified after the copolymerization with olefinically unsaturated compounds, so that the resulting liquid composition is curable by means selected from thermal, actinic light, and electron beams, and mixtures thereof.

Claims 10-11 (Canceled)

12. (Previously Added) A liquid composition of claim 4, wherein [A.] the polyols (iii) have a hydroxyl number (OHN) of from 250 to 450, a number-average molecular weight M_n, of from 400 to 600, a mass-average molecular weight M_w, in the range from 600 to 1100, and a polydispersity M_n/M_w, from 1.7 to 1.9.

Claims 13-14 (Canceled)

15. (Currently amended) The composition of claim 4 wherein said composition comprises a [A] homopolymer or copolymer. [as claimed in claim 2, wherein compounds selected from the group consisting of polyols, epoxides and mixtures thereof are used as reactive diluents.]

Claims 16 (Withdrawn) A homopolymer or copolymer as claimed in claim 15, wherein the polyols used comprise

(i) hyperbranched compounds containing a tetrafunctional central group derived from compounds selected from the group consisting of ditrimethylolpropane, diglycerol, ditrimethylolethane and mixtures thereof, and a tetrafunctional central group of the general formula I

$C[-A_q-X-]_m[-A_r-x-]_n[-A_s-X-]_o[A_t-X-]_p$ (I),

in which the indices and variables have the following definitions:

m + n + o + p = 4; where

m is an integer from 1 to 3, and

n, o and p are 0 or an integer from 1 to 3;

q, r, s and t are an integer from I to 5, where q > r, s, t;

X is -0-, -S- or -NH-;

A is $-CR_2-$; where

R is selected from the group consisting of -H, -F, -Cl, -Br, -CN, $-NO_2$ C_1-C_3 alkyl or haloalkyl or C_1-C_3 alkoxy radical or, if q, r, s and/or t are at least 2, R is a C_2-C_4 is selected from the group consisting of alkanediyl and oxaalkanediyl radicals having 2 to 5 carbon atoms and an oxygen atom -O- which bridges from 3 to 5 carbon atoms of the radical -A-;

(ii) cyclic and/or acyclic C_9-C_{16} alkanes

functionalized with at least two hydroxyl groups or at least one hydroxyl group and at least one thiol group;

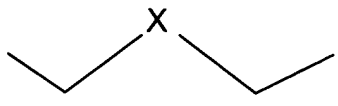
(iii) polyols obtained by hydroformylating oligomers of the formula (III),

$R^3R^4C=[CH-R^2-CH]_v=CR^5R^6$ (III),

in which R^2 is $-(-CH_2-)_w-$,

in which the index w is an integer from 1 to 6, or

R^2=



in which X is $-CH_2-$ or an oxygen atom;

R^3, R^4, R^5 and R^6 independently of one another are hydrogen atoms or alkyl; and the index v is an integer from 1 to 15.

17. (Withdrawn) A homopolymer or copolymer of claim 16, wherein

the polyols (i) used comprise
a hyperbranched compounds obtained by reacting 2,2- bishydroxymethylbutane-1,4-diol with phthalic anhydride and then reacting the resultant intermediate with glycidyl esters of tertiary, highly branched, saturated monocarboxylic acids,

the polyols (ii) used comprise dialkyloctanediols, and

the polyols (iii) used comprise hydroformylated and hydrogenated oligomers, obtained by metathesis from acyclic monoolefins and cyclic monoolefins, hydroformylation of the -resultant oligomers and subsequent hydrogenation, the cyclic monoolefin used comprising cyclopentene and the acyclic monoolefins used comprising hydrocarbon mixtures obtained in petroleum processing by cracking (C_5 cut), and the polyols (iii) having a hydroxyl number (OHN) of from 200 to 60, a number-average molecular weight M_n, of from 400 to 1 000, a mass-average molecular weight M_w, in the range from 600 to 2 000, and a polydispersity M_n/M_w, from 1.4 to 3.

18. (Currently Amended) A homopolymer or copolymer of claim 15, wherein [A.] the polyols (iii) used in polymerization of the homopolymer or copolymer have a hydroxyl number (OHN) of from 250 to 450, a number-average molecular weight M_n, of from 400 to 600, a mass-average molecular weight M_w, in the range from 600 to 1100, and a polydispersity M_n/M_w, from 1.7 to 1.9.

19. (Canceled)

20. (Withdrawn) A homopolymer or copolymer of claim 15, wherein the reactive diluents containing epoxide groups comprise

(iv) glycidyl ethers of polyols or polyphenols such as glycerol, diglycerol, glucitol, erythritol, pentaerythritol, dipentaerythritol, trimethylolpropane, trimethylolethane, ditrimethylolpropane, ditrimethylolethane, tetrakis(2-hydroxyethyl)ethane, tetrakis(3-hydroxypropyl)methane, the tetraols II1 to II10:

$HO\text{-}(\text{-}CH_2\text{-})_2\text{-}C(\text{-}CH_2\text{-}OH)_3$,
(II1)

$HO\text{-}(\text{-}CH_2\text{-})_3C(\text{-}CH_2\text{-}OH)_3$,
(II2)

$HO\text{-}(\text{-}CH_2\text{-})_4\text{-}C(\text{-}CH_2\text{-}OH)_3$,
(II3)

$HO\text{-}(\text{-}CH_2\text{-})_5\text{-}C(\text{-}CH\text{--}OH)_3$,
(II4)

$[HO\text{-}(\text{-}CH_2\text{-})_2\text{-}]_2C(CH_2\text{-}OH)_2$,
(115)

[HO- (-CH_2-)$_2$-]$_3$C-CH_2-OH,
(II6)

HO- (-CH_2-)$_3$-C[-(-CH_2-)$_2$-OH]$_3$,
(II7)

HO- (-CH_2-)$_3$-C[- (-CH_2-)$_2$-OH]$_2$ (-CH_2-OH)
(II8)
HO- (-CH_2-)$_4$-C (-CH_2-OH)[- (-CH_2-)$_2$-OH][-(-CH_2-)$_3$- OH] and
(II9)

HO- (-CH_2-)$_5$-C (-CH_2-OH)[- (-CH_2-)$_4$-OH] 2
(II10);

the polyols (i), (ii) and (iii), pyrocatechol, resorcinol, hydroquinone, pyrogallol, phloroglucinol, (p-hydroxy- phenyl)phloroglucinol, 5-(7-hydroxynaphth-l- yl)pyrogallol, bisphenol F, bisphenol A or novolaks;

(v) low molecular mass epoxy resins or oligomers which contain glycidyl-containing monomers (A6) in copolymerized form;
(vi) glycidyl esters of Versatic® acid;

(vii) epoxy resin esters of saturated and unsaturated fatty acids;

and

(viii) epoxidized triglycerides of natural oils and esters, and mixtures thereof.

Claims 21-30 (Canceled)

31. (New) A liquid composition prepared by copolymerizing olefinically unsaturated compounds in a reaction medium of reactive diluents wherein the reactive diluents comprise polyols selected from the group consisting of

hyperbranched compounds containing (a) a tetrafunctional central group derived from at least one of ditrimethylolpropane, diglycerol, ditrimethylolethane and (b)a tetrafunctional central group

of the general formula I

$C[-A_q-X-]_m[-A_r-x-]_n[-A_s-X-]_o[A_t-X-]_p$ (I),

in which the indices and variables have the following definitions:

m + n + o + p = 4; where

m is an integer from 1 to 3, and

n, o and p are 0 or an integer from 1 to 3;

q, r, s and t are an integer from I to 5, where $q \geq r, s, t,$

X is -0-, -S- or -NH-;

A is $-CR_2-$; where

R is selected from the group consisting of -H, -F, -Cl, -Br, -CN, $-NO_2$ C_1-C_3 alkyl or haloalkyl or C_1-C_3 alkoxy radical or, if q, r, s and/or t are at least 2, R is selected from the group consisting of a C_2-C_4

alkanediyl, oxaalkanediyl radical having 2 to 5 carbon atoms, an oxygen atom -O- which bridges from 3 to 5 carbon atoms of the radical -A- and mixtures thereof.

32. (New)

A liquid composition prepared by copolymerizing olefinically unsaturated compounds in a reaction medium of reactive diluents wherein the reactive diluents comprise polyols

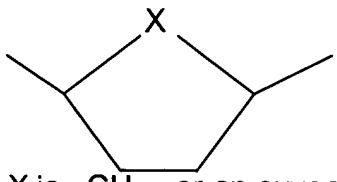
selected from the group consisting of polyols obtained by hydroformylating oligomers of the formula (III),

$R^3R^4C=[CH-R^2-CH]_v=CR^5R^6$ (III),

in which R^2 is $-(-CH_2-)_w-$,

in which [the index] w is an integer from 1 to 6, or

$R^2=$



in which X is $-CH_2-$ or an oxygen atom;

R^3, R^4, R^5 and R^6 independently of one another are hydrogen atoms or alkyl of from C_1 to C_{10} carbon chain length; and

the index v is an integer from 1 to 15.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Lipman whose telephone number is 571-272-1105. The examiner can normally be reached on 8-5 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bernard Lipman
Primary Examiner
Art Unit 1713

BL/hs